# Linking childhood emotional abuse and adult depressive symptoms

# Linking childhood emotional abuse and adult depressive symptoms: The role of mentalizing incapacity

*Hyper/hypomentalizing: Pathways whereby emotional abuse can lead to depression*

Elizabeth Tianyu Li [1], Ellen Carracher*[1], and Timothy Bird[1]

[1] Department of Clinical and Health Psychology, School of Health in Social Science, The University of Edinburgh, Edinburgh, The United Kingdom

*Corresponding author information:

Ellen M Carracher, Department of Clinical and Health Psychology, School of Health in Social Science, The University of Edinburgh, Doorway 6, Old Medical Building, Teviot Place, Edinburgh, EH8 9AG, The United Kingdom (phone: 07401502697; email: ellencarracher@live.co.uk).

**Declarations of interest:** None

**Acknowledgements:** The authors would like to thank the people who have participated in this study.

**Abstract**

**Background.** Accumulated evidence suggests that childhood emotional abuse is particularly related to adulthood depression. However, this connection demands further explanation regarding potential intermediate factors.

**Objective.** This study aims to disentangle the independent effects of emotional abuse on adulthood depressive symptoms by statistically controlling for other forms of childhood maltreatment, and to examine mentalizing incapacity (i.e., hypermentalizing, hypomentalizing) as a potential mediator in this relationship.

**Participants.** A general sample of 205 adults were assessed online.

**Method.** Participants completed a set of self-report measures assessing childhood maltreatment history, mentalizing and depression symptoms. Hierarchical multiple regression was employed to assess the independent effect of emotional abuse on depression. Bootstrap analysis was used to test mediation models.

**Results.** Emotional abuse continued to exert a significant effect on adulthood depression after controlling for other forms of childhood maltreatment and mentalizing incapacity. A mediation effect between childhood emotional abuse and adulthood depression symptoms via mentalizing incapacity, both hypermentalizing (b=2.02, 95% CI [0.96, 3.25]) and hypomentalizing, (b=1.26, 95% CI [0.59, 1.99]), was established.

**Conclusions.** This study provided preliminary evidence for hypermentalizing and hypomentalizing as mechanisms whereby early emotional abuse can lead to later depression. A normal to high level of mentalizing capacity might serve as a protective factor to suspend the pathway from childhood maltreatment to subsequent depression and become a promising target in psychological treatments. As cross-sectional data does not allow conclusions to be

drawn on causal relationships, longitudinal data in a more representative sample is needed to capture relevant context and further examine our findings.

**Keywords**

Emotional abuse; depression; mentalizing; hypermentalizing; hypomentalizing.

**Funding**

The research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## Introduction

Accumulated biopsychosocial evidence has identified childhood maltreatment as a predictor of adulthood depressive symptoms (e.g., Tunnard et al., 2014; Harkness, Bagby, &

Kennedy, 2012). Individuals with experiences of childhood maltreatment were twice as likely as those without to develop both recurrent and persistent depressive episodes, disregarding the specific contribution of different maltreatment subtypes (Nanni, Uher, & Danese, 2012). Historically, research has focused on the effects of the more 'obvious' subtypes of maltreatment, predominantly sexual and physical abuse, or the combination of childhood abuse on increased risk of adult depression (e.g., Cutajar et al., 2010; Fergusson, Boden, & Horwood, 2008; Kendler, Kuhn, & Prescott, 2004). Recently, however, researchers have started to examine particular types of abusive experiences as risk factors for an outcome of depression with a focus on the more 'silent' forms of maltreatment such as emotional abuse and neglect.

Emotional abuse is characterised by threatening behavior, rejecting and hostile verbal abuse, or exploitation (Hart & Brassard, 1991). It includes deliberate behavior which conveys to the individual that they are unworthy or unwanted (Hovens, 2015). Emotional abuse has been suggested as a core component underlying all forms of child maltreatment and has at least equivalent developmental consequences as physical and sexual abuse (e.g., Schulz et al., 2017; Vachon, Krueger, Rogosch, & Cicchetti, 2015; Rosenkranz, Muller, & Henderson, 2012). Emotional neglect, in comparison, describes an absence of emotional support or failure to facilitate emotional or cognitive development (Hart & Brassard, 1991). Prevalence findings for such emotional maltreatment vary hugely, ranging from as low as 6% (May-Chahal & Cawson, 2005) to as high as 48.1% (Goldsmith et al., 2013). Underreporting is highly likely as abuse may remain hidden and victims may be unaware that their experiences constitute abuse (Hovens, 2015). Some studies have found both emotional abuse and neglect to be associated with depression (e.g., Carvalho Fernando et al., 2014), while a growing body of evidence comparing the differential impacts of different types of maltreatment points to the special relevance of emotional abuse to adulthood depression (e.g., Neumann, 2017;

Martins, Baes, de Carvalho Tofoli, & Juruena, 2014; Hamilton et al., 2013; McLaughlin et al., 2011; Widom, DuMont, & Czaja, 2007).

Unexpectedly, a systematic review (Carr, Martins, Stingel, Lemgruber, & Juruena, 2013) identified more similarities than differences between the effects of childhood maltreatment subtypes in triggering adult psychopathology, suggesting that depressive disorders are associated with childhood maltreatment in an unspecific way. They concluded from 44 articles that physical abuse, sexual abuse, and unspecified neglect were associated with mood disorders more specifically, while emotional abuse was associated with personality disorders and schizophrenia more specifically. Yet it is noteworthy that from the 44 articles analysed in this review, 43 evaluated sexual abuse and 33 evaluated physical abuse, but only 18 evaluated emotional abuse and 13 evaluated emotional neglect, in predicting the development of psychopathology in adults. Adult depression was associated to emotional abuse in only 3 studies (Becker & Grilo, 2011; Wingenfeld et al., 2011; Gibb et al., 2007) and to emotional neglect in only 4 studies. By contrast, a review by Infurna et al. (2016) allowed an examination of the unique effects of different maltreatment subtypes specifically on adult and adolescent depression. Separate meta-analyses were conducted for each type of maltreatment (i.e., physical abuse, sexual abuse, antipathy, neglect, and psychological abuse) in 12 studies assessed with the same measure, the Childhood Experience of Care and Abuse (CECA) interview (Bifulco, Bernazzani, Moran & Jacobs, 2005). Psychological abuse presented a stronger association with the outcome of depression than other forms of maltreatment. However, neither report limited the scope of their analyses to longitudinal work, which weakens the strength of the findings. The distinction in their results might be partly explained by the different criteria in their study selection; indeed, no overlap was found between the included articles of each.

More importantly, the inconsistencies in the literature within this question could be explained by the nature of childhood emotional abuse. First, there is a lack of consensus and consistency regarding the definition and measurement of emotional abuse. For example, Infurna and colleagues (2016) distinguished psychological abuse (i.e., emotional abuse) from neglect and antipathy according to the CECA interview assessment; however, Carr and colleagues (2013) included various instruments to assess childhood maltreatment where emotional abuse might or might not be separated from emotional neglect or antipathy. Second, the high rate of co-occurrence of different forms of maltreatment has been widely documented (e.g., Vachon et al., 2015; Waxman, Fenton, Skodol, Grant, & Hasin, 2014). The specific effect of emotional abuse is, therefore, often confounded by the high association with other forms of maltreatment (Bifulco, Moran, Baines, Bunn, & Stanford, 2002). Failure to control for co-occurring forms of maltreatment in analyses could cause biased estimates when examining the association of emotional abuse with adult mental health (Taillieu, Brownridge, Sareen, & Afifi, 2016).

Despite the growing body of findings suggesting specifically detrimental effects of childhood emotional abuse on adulthood depression, other forms of abuse that may have been contributing factors were not ruled out in most analyses. To date, few studies have statistically accounted for other forms of maltreatment in order to investigate the independent role of emotional abuse as a predictor of adulthood depression. Spertus and colleagues (2003) reported that both emotional abuse and neglect were significant predictors of depression symptoms, even after partialling out the variance accounted for by physical abuse, sexual abuse, and lifetime trauma exposure in a sample of women presenting to a primary care practice. Wright, Crawford, and Del Castillo (2009) found that emotional abuse and emotional neglect each contributed unique variance to subsequent internalizing symptomatology even after controlling for all other forms of maltreatment in a general

sample of young adults. Crow and colleagues (2014) found that childhood emotional abuse specifically predicted adult depression symptoms when controlling for all other trauma types in a sample of low-income adults. Thus, to clarify whether emotional abuse differs from other forms of childhood maltreatment with regards to their relevance for adult depression, the present study statistically accounted for every other childhood maltreatment type using hierarchical multiple regression analysis.

Although childhood emotional abuse necessarily constitutes a risk factor for adulthood onset of depression, this connection demands further explanation with regards to potential intermediate factors. Mechanisms that link emotional abuse to adult depression have mainly been related to maladaptive relationship and thinking styles, including internalized maladaptive schemas (Wright et al., 2009), negative cognitive styles (Hankin, 2005), fear of criticism and rejection (Maciejewski & Mazure, 2006), emotion dysregulation (Crow, Cross, Powers, & Bradley, 2014), hopelessness (Gibb, Alloy, Abramson, & Marx, 2003), and self-depression associations (Van Harmelen et al., 2010).

To capture the interpersonal, cognitive, and developmental constructs of depression, the concept of mentalizing was introduced and examined as a mediator in the present study. The concept of mentalizing is an umbrella term for a group of basic psychological processes (e.g., theory of mind, reflective functioning) (Fonagy & Allison, 2012). It describes the capacity to understand the mental states of self and others and to use them to predict people's thoughts and actions (Frith & Frith, 2006). Mentalizing is a form of social cognition which is intrinsic to emotional regulation and the creation of rewarding interpersonal relationships (Suchman, Pajulo, & Mayes, 2013). It initially comes into play when the caregiver tries to understand and respond to the infant’s needs; through recognition of him/herself in the mental state of the caregiver, the child experiences the caregiver as benign and develops the capacity to explore his/her own and others’ minds (Fonagy, Gergely, & Target, 2007).

However, when the child grows up in an abusive or neglectful environment without being recognized as an intentional agent, their own capacity to mentalize may fail to develop; moreover, he/she may find the caregiver carries hostile beliefs which are difficult to internalize, so that the child inhibits mentalizing to protect him/herself from such negative self-images (Fonagy & Target, 1997; Howe, 2005). Reduced mentalizing capacity, as a defensive strategy, can be temporarily protective to the child within the family, yet no longer adaptive when it comes to different developmental stages. As the capacity for mentalizing creates a feeling of coherence and stability of the self, in those whose capacity to mentalize is impaired, this integrative process is undermined (Luyten & Fonagy, 2016). Thus, feelings of being "bad" or "worthless" come to dominate the self-experience in victims of childhood emotional abuse.

A few small-scale studies found that depressed patients exhibited poorer mentalizing abilities than controls, especially in situations concerning rejection and loss (Fischer-Kern et al., 2013; Fischer-Kern et al., 2008; Taubner, Kessler, Buchheim, Kächele, & Staun, 2011). As the capacity to mentalize refers to an interpersonal understanding of mental states (Fonagy & Allison, 2012), the distorted social information processing patterns in depression can be thought of as impairments in mentalizing (Luyten, Fonagy, Lemma, & Target, 2012). Luyten and colleagues (2012) hypothesized that mentalizing incapability in depressed individuals may manifest as a state of hypermentalizing or hypomentalizing; moreover, as hypermentalizing and hypomentalizing (i.e., certainty versus uncertainty about mental states) are rigid while not mutually exclusive, some may show a hypermentalization-hypomentalization cycle. As depressed individuals tend to externalize alien self-experiences that they cannot mentalize (Luyten & Fonagy, 2016), individuals in a state of hypermentalizing often show reasoning about mental states with repetitive, lengthy, and overly analytical and detailed patterns for self-serving functions; whereas in those with a state

of hypomentalizing, desires and feelings are equated with observable behaviors and no alternative can be envisioned (Sharp, 2014; Luyten et al., 2012).

Importantly, a recent mediation analysis (Schulz et al., 2017) found that the relation between childhood emotional abuse and self-rated depression symptoms was mediated by borderline psychopathology traits, which were famously characterised by impairments in mentalizing (Fonagy & Luyten, 2009). Thus, the present study aimed to bring together research on childhood emotional abuse, adult depression symptoms, and mentalizing incapacity to shed more light on the psychological pathways beyond the relationships. We wished to examine mentalizing incapacity (i.e., hypermentalizing, hypomentalizing) as a potential mediator in the relationship between childhood emotional abuse and adult depression outcomes, with a focus on the mentalizing of one's own mental processes.

First, we hypothesized that all types of childhood maltreatment would be positively correlated with both adulthood depression symptoms and mentalizing incapacity. The more 'silent' forms of childhood maltreatment (i.e., emotional abuse, neglect, antipathy) would be more strongly associated with depression symptoms and mentalizing incapacity than physical and sexual abuse. Second, we hypothesized that childhood emotional abuse would remain a strong predictor of both adulthood depressive symptoms and mentalizing incapacity, even after statistically controlling for every other childhood maltreatment type. Finally, we hypothesized that mentalizing incapacity, both hypermentalizing and hypomentalizing, would mediate the relationship between childhood emotional abuse and adulthood depression symptoms.

## Method

### Procedure

This cross-sectional study was based on data collected from a two-month online survey set up using Jisc Online Surveys (see https://www.onlinesurveys.ac.uk/) in May and June 2018. To obtain a sample with age, gender and background diversities, participants were recruited through advertisements on social media networks and online research recruitment platforms. Prior to data collection, ethical approval was obtained from the Department of Clinical and Health Psychology Ethics Research Panel at the University of Edinburgh. All participants were required to indicate consent prior to participation. Participants completed a battery of self-report measures assessing childhood maltreatment history, mentalizing and depression symptoms, which took approximately 15-20 minutes. Responses were anonymously collected and saved as confidential. Participants were informed of and directed to support resources in case of any distress during or after the survey.

**Participants**

The study sample consisted of 205 participants (80.5% female). All participants were aged above 16 years old (M = 28.2, SD = 10.86). The majority of participants had their birth mother solely (52.6%) or birth mother and father equally (40.3%) as primary caregiver(s) during childhood. An initial power analysis using G*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009) suggested a minimum sample size of 68 participants to detect effect sizes of 0.15 or larger, given $\beta = 0.8$ and $\alpha = 0.05$. Post-hoc power analyses suggested that with the large sample and only two predictors per test, both the hypomentalizing ($f^2 = 2.02$) and hypermentalizing ($f^2 = 1.26$) mediation analyses were fully powered (Power >.99). A sensitivity analysis suggested that this study was powered to detect effect sizes of 0.144 or larger.

**Measures**

*Demographics.* Demographic information regarding age, gender, and childhood primary caregiver(s) were collected during the self-report assessment.

*Childhood sexual and physical abuse.* Childhood sexual and physical abuse were measured by two items within the Adverse Childhood Experience questionnaire (ACE; Felitti et al., 1998). As the current study was part of a larger project, it was not possible to incorporate more comprehensive scales for these variables due to time constraints. The ACE questionnaire has been shown as a reliable and valid measure in different populations. Sexual abuse was measured by the question "Did an adult or person at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way? Or try to or actually have oral, anal, or vaginal sex with you?". Physical abuse was measured by the question "Did a parent or other adult in the household often push, grab, slap, or throw something at you? Or ever hit you so hard that you had marks or were injured?". Dichotomous (Yes/No) responses were collected for these two items.

*Childhood emotional abuse.* Childhood emotional abuse was measured by a 7-item Childhood Emotional Abuse Scale created and validated by Kent and Waller (1998), based on the Child Abuse and Trauma Scale (CATS; Sanders & Becker-Lausen, 1995). Kent and Waller's 7-item scale mostly reflects the concepts of "spurning" and "terrorizing" from Hart and Brassard's (1987) definition of childhood emotional abuse, and it has been shown to correlate significantly with depression symptoms (r = .35) and play a more central role in depression than did the original CATS (Kent & Waller, 1998). Items are scored on a five-point Likert scale from 0 (Never) to 4 (Always). Scoring involves calculating the mean of all items. Excellent internal reliability was found in the current sample (Cronbach's $\alpha$ = .92). Childhood emotional abuse was also measured by one item "Did a parent or other adult in the household often swear at you, insult you, put you down, or humiliate you, or act in a way that made you afraid that you might be physically hurt? " within the ACE. A dichotomous

(Yes/No) response was collected for this item to estimate the approximate prevalence and rate of co-occurrence with other abuse types.

*Childhood neglect and antipathy.* Childhood neglect and antipathy were measured by the parental care section in the Childhood Experience of Care and Abuse Questionnaire (CECA.Q; Bifulco et al., 2005). The CECA.Q shows satisfactory reliability and validity as a self-report measure for adverse childhood experiences (Bifulco et al., 2005). The CECA.Q parental care subscale assesses a mix of neglect (8 items) and antipathy (8 items) from a mother figure and father figure respectively. The items are rated on a five-point Likert scale from 1 (No, not at all), 3 (Unsure), to 5 (Yes, definitely), for presence in the first 18 years of life. Scoring involved summing items, once certain ones were reversed as guided. Mean scores for each item from the mother figure and father figure questions were calculated to represent overall parental neglect and antipathy. Excellent internal consistency was found in the current sample (Cronbach's $\alpha$ = .92). Childhood neglect and antipathy were also measured by two items within the ACE: "Did you often feel that no one in your family loved you or thought you were important or special, or your family didn't look out for each other, feel close to each other, or support each other? " and "Did you often feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you, or your parents were too drunk or high to take care of you or take you to the doctor if you needed it?". Dichotomous (Yes/No) responses were collected for these items to roughly estimate the prevalence and the rate of co-occurrence with other maltreatment types.

*Mentalizing.* Mentalizing was measured by the 8-item version of the Reflective Functioning Questionnaire (RFQ; Fonagy et al. 2016). Each statement was rated on a seven-point Likert scale from 1 (Strongly disagree) to 7 (Strongly agree) to assess hypermentalizing and hypomentalizing (i.e., certainty versus uncertainty about mental states). An accompanying SPSS syntax designed by Fonagy et al. (2016) produced two outcomes:

Certainty about Mental States (RFQ_C) and Uncertainty about Mental States (RFQ_U). RFQ_C assesses the extent to which an individual agrees with statements such as "I don't always know why I do what I do". An extremely low agreement reflects hypermentalizing, whilst some agreement purportedly reflects more genuine mentalizing. In the RFQ_U subscale, very high agreement to statements such as "Sometimes I do things without really knowing why" indicates a stance characterized by an almost complete lack of knowledge about mental states, or hypomentalizing, while some agreement reflects more genuine mentalizing (Fonagy et al. 2016). Acceptable internal reliability was found in the current sample (Cronbach's $\alpha$ = .76).

*Current depression symptoms.* Depressive symptoms were measured by 7 items of the Depression subscale in the Depression Anxiety Stress Scales-21 (DASS; Lovibond & Lovibond, 1995a). Rather than treating depression as a categorical diagnosis, the present study assessed severity of depressive symptoms, including dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia. These 7 symptoms were rated on a four-point Likert scale from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time), based on the severity or frequency individuals have experienced symptoms over the previous week. Scoring involved summing these items. The DASS has been found to have acceptable test-retest reliability over three weeks (r = .77, Asghari, Saed, & Dibainia, 2008) and shows concurrent validity with an alternative depression measure (r = .79, Antony et al., 1998). It has also been shown to yield meaningful discriminations in a variety of settings (Lovibond & Lovibond, 1995b). Excellent internal consistency was found in the current sample (Cronbach's $\alpha$ = .91).

**Data Analysis**

Data analysis was conducted using SPSS Statistics 24.0. There were no missing values. First, a correlation analysis was performed to examine associations between

childhood maltreatment subtypes and the outcome variables of depressive symptoms and mentalizing incapacity. A point-biserial correlation was used to measure the strength and direction of associations of sexual and physical abuse with other continuous variables, whereas Spearman's rank correlation was used to evaluate the associations of neglect, antipathy, and emotional abuse with depressive symptoms and hyper/hypomentalizing. Next, to clarify whether emotional abuse differs from other forms of childhood maltreatment with regards to its relevance for mentalizing incapacity and depression outcomes, we statistically controlled for co-occurring forms of maltreatment using a hierarchical multiple regression analysis. Finally, both Baron and Kenny's (1986) theory of mediation and bootstrapping techniques using the PROCESS macro (version 3; Hayes, 2018) were applied to test the mediating role of mentalizing incapacity between childhood emotional abuse and adult depression symptoms. This nonparametric resampling procedure enabled us to use 5,000 bootstrap resamples to generate a 95% bias-corrected confidence interval of the indirect effect $a \times b$ (Preacher & Hayes, 2008). If zero was not contained in the confidence interval, we concluded that the indirect effect was significant. This procedure was not based on the assumption of normally distributed data and was acknowledged as more reliable and powerful compared to the Sobel Test (Sobel, 1982) and causal steps approach (Hayes, 2009) in testing mediation.

## Results

### Initial Analysis

In this sample of 205 participants, 57 (27.8%) reported a history of emotional abuse, 52 (25.4%) reported a history of neglect and antipathy, 38 (18.5%) reported a history of physical abuse, and 22 (10.7%) reported a history of sexual abuse. 30 (14.6%) reported co-occurrences of childhood emotional abuse and physical abuse, 15 (7.3%) reported co-occurrences of childhood emotional abuse and sexual abuse, 13 (6.3%) reported co-

occurrences of childhood emotional abuse, physical abuse, and sexual abuse, and 37 (18%) reported co-occurrences of childhood emotional abuse and neglect and antipathy. In measuring current depressive symptoms, 50.3% of participants scored “Normal”, 14.1% “Mild”, 18.4% “Moderate”, 4.3% “Severe”, and 13% scored “Extremely severe”. The Shapiro-Wilk test was taken to assess normality. As the p-values were all below 0.05, the data significantly deviated from a normal distribution. Skewness and kurtosis values also suggested non-normality for all variables. Means, standard deviations and intercorrelations of the variables are presented in **Table 1**.

Analysis confirmed several of our hypotheses. The level of depressive symptoms was significantly correlated with both hypermentalizing and hypomentalizing and with all forms of childhood maltreatment, except sexual abuse ($r_{pb}$= .061, $p$ = .410). The more ‘silent’ forms of childhood maltreatment (i.e., neglect, antipathy, and emotional abuse) were more strongly associated with adult depression symptoms than physical abuse. Childhood emotional abuse was more strongly correlated with mentalizing incapacity and depressive symptoms compared to other maltreatment subtypes. Noticeably, strong and positive correlations emerged among the variables of emotional abuse, antipathy, neglect, as well as between hypermentalizing and hypomentalizing. Both emotional abuse and antipathy were significantly associated with hypermentalizing ($\beta$ = -.33, $p$ < .001; $\beta$ = -.36, $p$ < .001) and hypomentalizing ($\beta$ = .34, $p$ < .001; $\beta$ = .40, $p$ < .001). A significant association was found to exist between neglect and hypomentalizing ($\beta$ = .23, $p$ < .01), but not between neglect and hypermentalizing ($\beta$ = -.19, $p$ = .01). Neither sexual abuse nor physical abuse were related to hypermentalizing or hypomentalizing.

**Regression Analysis**

A multiple hierarchical regression was then carried out to predict depressive symptoms from sexual and physical abuse, neglect, antipathy, emotional abuse,

hypermentalizing and hypomentalizing, input stepwise in that order. Hence, six models were tested in total, with each becoming a better fit for the data. A detailed summary of each model can be seen in **Table 2**. The final model with all predictors entered provided the best fit, with a significant regression equation ($F(7, 197) = 14.33$, $p < .001$, $R^2 = .36$). All variance inflation factors (VIFs) were less than 4.5, indicating a moderate correlation. Only emotional abuse ($\beta = .31$, $p < .01$) and hypomentalizing ($\beta = .40$, $p < .001$) remained independently significant in this final model. Sexual abuse ($\beta = -.01$, $p > .05$), physical abuse ($\beta = .04$, $p > .05$), neglect ($\beta = .03$, $p > .05$), antipathy ($\beta = -.07$, $p > .05$) and hypermentalizing ($\beta = -.04$, $p > .05$) all became insignificant predictors once other predictors were entered.

As hypothesized, hierarchical multiple regression analysis confirmed that emotional abuse remained a significant predictor of adult depression symptoms even after accounting for every other form of childhood maltreatment and mentalizing incapacity. None of the other childhood maltreatment subtypes remained associated with depressive symptoms after controlling for emotional abuse. Although hypermentalizing was significantly associated with depression symptoms while controlling for childhood emotional abuse, the association between childhood emotional abuse and depressive symptoms did not decrease after hypermentalizing was controlled. However, when hypomentalizing was examined as a mediator, the effects of childhood emotional abuse on depression symptoms did decrease. According to Baron and Kenny's (1986), the hierarchical regression analysis inferred a mediating effect for hypomentalizing, but not for hypermentalizing, in the relation between childhood emotional abuse and depression symptoms.

**Mediation Analysis**

An explicit analysis estimating direct and indirect effects using bootstrapping techniques was performed to confirm the results of the hierarchical multiple regression analysis. In our mediation analysis (see **Figure 1**), the *a* path represents the path from

childhood emotional abuse to hypomentalizing; the *b* path represents the impact of hypomentalizing on adult depression symptoms; the *c* path portrays the total effect of childhood emotional abuse on adult depression symptoms; and the *c'* path depicts the impact of childhood emotional abuse on adult depression symptoms when accounting for hypomentalizing. Unstandardized coefficients are reported for each path. The indirect effect from the bootstrap analysis was positive and significant ($a \times b = 2.02$) and the 95% confidence interval of the unstandardized regression coefficients for this indirect effect did not include zero [0.96, 3.25]. The direct effect *c* (5.56) was significant ($p < .001$). A mediating effect was therefore established for hypomentalizing in the association between childhood emotional abuse and adult depression outcomes.

Hypermentalizing was also examined as a potential mediator using 5,000 bootstrap resamples. In the same manner, hypermentalizing had a significant mediational function in the association between childhood emotional abuse and current depressive symptoms [0.59, 1.99] (see **Figure 2**). The inconsistent results from the hierarchical multiple regression analysis and the mediation analysis might be caused by the non-symmetry in the distribution of the estimates (Preacher & Hayes, 2008). As the bootstrapping analysis was not based on the assumption of normally distributed data, the 95% confidence interval for this indirect effect was decided to be more informative than the *p*-value in the regression analysis (Muthén & Muthén, 2010).

## Discussion

This study examined the links among childhood emotional abuse, adult depressive symptoms, and mentalizing incapacity in a general sample of adults. The more 'silent' forms of childhood maltreatment were more strongly associated with adult depressive symptoms and mentalizing incapacity than physical and sexual abuse. Childhood emotional abuse not only appeared as the strongest predictor of adult depression symptoms and mentalizing

incapacity when accounting for every other form of childhood maltreatment, but remained a strong predictor of adult depression symptoms even after controlling for mentalizing incapacity. Moreover, a mediation model was established where mentalizing incapacity might be one mechanism through which childhood emotional abuse increases risk for adult depression.

Despite some studies claiming that childhood maltreatment is likely to result in adult-onset depression in an unspecific way (e.g., Carr et al., 2013; Nanni, Uher, & Danese, 2012), our analysis suggested that distinct forms of childhood maltreatment have different influences on adult depression outcomes. Consistent with previous studies (e.g., Infurna et al., 2016; Musliner & Singer, 2014; van Veen et al., 2013), our findings add to the evidence of the potential impact of the more 'silent' types of childhood maltreatment, other than physical and sexual abuse, on the development of depression in adulthood. As emotional abuse, neglect, and antipathy are intrinsically difficult to differentiate from more 'obvious' abusive experiences or daily maladaptive parent-child interactions, whereas physical and sexual abuse are limited to specific acts of commission (Maguire et al., 2015), a certain amount of impact on adult psychopathology ascribed to physical and sexual abuse might be instead coming from emotional abuse, neglect, and antipathy.

A unique connection emerged between childhood emotional abuse and adulthood depressive symptoms. Our findings suggested that childhood emotional abuse was a more reliable and powerful predictor of subsequent depression compared to every other form of childhood maltreatment. A physically or sexually abused child may attribute hostile intent to others, while a child with experiences of neglect and antipathy is more likely to be left to develop self-representation in the absence of harmful information explicitly given by the abuser. However, emotionally abused children tend to construct a causal inference in relation to the experiences of being rejected, belittled, degraded, terrorized, and isolated because

negative evaluation is supplied directly by the primary attachment figures (Shapero et al., 2014). Moreover, emotional abuse may be of particular importance in mediating the negative effects of other forms of childhood maltreatment (Tonmyr, Draca, Crain, & MacMillan, 2011), as it might not be the act of physical or sexual abuse per se, but rather the consequent feelings of shame and powerlessness that disturb the child (Deblinger & Runyon, 2005).

Given that there might be years or even decades between abusive experiences and onset of depression, potential intermediate factors should play an indispensable role. However, we found that childhood emotional abuse remained a strong predictor of adult depression symptoms even after controlling for mentalizing incapacity. This finding is in line with Neumann (2017) who reported that recollections of childhood emotional abuse were more closely associated with adult depression than current attachment representations. Prospective studies are needed to assess the extent to which each childhood maltreatment variable is an independent risk factor for adult depression, in comparison with other potential psychological mechanisms.

The finding that childhood emotional abuse is associated with both hypermentalizing and hypomentalizing, at least in respect to one's own mental states, conforms to Fonagy and colleagues' theory of mentalizing as well as studies on the theory of mind ability in maltreated children. Abusive experiences are characterized by a parent's non-mentalizing stance, which has destructive effects on one's capability to reflect the self and others' mental states (Allen, Lemma, & Fonagy, 2012). Emotional abuse may particularly result in incompetence to establish an agentive sense of self then further mutuality in relationships. Both hypermentalizing and hypomentalizing were found to mediate the relationship between childhood emotional abuse and adult depression symptoms. When hypermentalizing and hypomentalizing come into play, the protective role of positive life events can be muted simultaneously and the mental ability that would normally be available to process different

social experiences can be undermined. Depression symptoms, therefore, become a by-product of the compromised mentalizing capacity. However, further research is required to examine Fonagy, Bateman and Luyten's (2012) standpoint that it is the dysfunctional characteristics of the parent-child interaction brought about by maltreatment, rather than maltreatment per se, that lead to impaired mentalizing and psychopathology.

As the correlation between hypomentalizing and hypermentalizing is extremely high, possible suppressor effects might be present. Importantly, future research should address how hypomentalizing and hypermentalizing, distinctively, relate to childhood emotional abuse and adult depression symptoms. For example, depressed individuals with a state of hypomentalizing can only feel loved when their significant others physically express their love as, to them, others' desires are equated with observable behaviors and no other alternatives can be conceived (Luyten et al., 2012). This might be closely linked to experiences of verbal abuse in childhood, due to which they can easily feel overwhelmed by fear of criticism. By contrast, depressed adults with a state of hypermentalizing may reason about mental states without any real connection to reality, as they experience past, present, and future as equally painful and immovable (Luyten et al., 2012). This might be closely linked to the deep-seated shame brought about by emotional rejection, isolation and degradation, due to which they are likely to interpret others' mental states in an obsessively detailed and repetitive way.

There are also several limitations that need to be considered when interpreting these findings. First, the present study relied entirely on self-report instruments and retrospective accounts of childhood variables. As depression often involves cognitive distortions, adults with depressive symptoms may recall and interpret their childhood in a more negative way without considering alternative interpretations. Some studies suggest that childhood emotional abuse is related to self-ratings of depression symptoms (e.g., Schulz et al., 2017),

but not to expert-ratings of depression symptoms (Schulz et al., 2017; Tunnard et al., 2014; Johnstone et al., 2009). The prevalence of adult depression also appears to be significantly higher when rated by self-report scales versus clinical interviews (Lim et al., 2018). However, it has been argued that cognitive distortions mainly refer to current life events, whereas autobiographical memory remains relatively unaffected (Gotlib & Joormann, 2010). Moreover, studies utilising Child Protective Services data (e.g., Mersky, Topitzes, & Reynolds, 2013) and neuroscience techniques (e.g., Anda et al., 2006) often find similar results to those using self-report instruments. Thus, the retrospective data of childhood experiences could be considered as valid and informative. In addition, our methodology using online data collection may allow more truthful reports due to increased anonymity and flexibility.

Second, the present report is part of a larger study focusing on emotional forms of abuse, and hence measured sexual and physical abuse using single, dichotomous questions to allow these to be controlled for. As physical and sexual abuse are typically easier for people to recognise than emotional abuse, single questions in the ACE scale are likely to have been sufficient for this purpose. It should be acknowledged, however, that abuse types were measured differently, and future research looking into direct comparisons between abuse types should strive to make measurement formats more uniform. The authors also hope that future studies could use the current findings to inform more cumulative approaches, looking at the additive effects of different abuse types in addition to their distinct effects. Further, as the scale used to assess mentalizing primarily assesses inferences about mental states in the self rather than in others, future research should utilise more comprehensive scales for measuring mentalizing, such as the Adult Attachment Interview (AAI-RF; George, Kaplan & Main, 1996) or the Mentalization Scale (MentS; Dimitrijević, Hanak, Dimitrijević & Marjanović, 2018).

Third, as this cross-sectional study does not allow conclusions to be drawn on causal relationships, additional study of longitudinal data is needed to establish the role of childhood emotional abuse and mentalizing incapacity in the development of adult depression symptoms. Fourth, although our sample size was sufficient for the analyses, they might not accurately represent the population. The number of participants with a history of childhood emotional abuse or current depression symptoms was modest and females were overrepresented. Replication using a larger, more representative sample would increase generalizability. Fifth, Khan and colleagues (2015) have reported that emotional abuse persisting into adolescence can be particularly influential in developing depression symptoms. Thus, information on possible moderators, such as age at time of maltreatment, duration of maltreatment, and severity of maltreatment, should be included in future research. As parental maltreatment often extends throughout childhood and adolescence, a developmental cascade model should be explored within the current topic. Further, while the study disentangled the unique effects of emotional abuse, the cumulative effects of different forms of abuse and other adverse or traumatic experiences in childhood that may occur and amplify the effects of each other were not taken into consideration, thus limiting the clinical utility of the current findings.

The role of dysfunctional mentalization in maintaining the course of depression and causing depressive episode recurrence has been stressed (Luyten et al., 2012). Not only did Fonagy and Allison (2012) argue that all effective psychosocial interventions share the element of cultivating one's mentalization, but also evidence has increasingly emerged to support the effectiveness of interventions that have been explicitly inspired by the mentalizing approach (Fonagy, Campbell, & Bateman, 2017). An enhancement of the patient's mentalizing capacity would ultimately benefit treatment effects across various approaches (Bateman & Fonagy, 2012) as cognitive restructuring and behavior alteration may

occur as a result of increased mentalizing capacity (Fonagy & Allison, 2012). A good example is the Cognitive Behavioral Analysis System of Psychotherapy (CBASP, McCullough, 1984), a major programme in the National Institute for Health and Clinical Excellence (NICE) depression guidelines. Different from standard CBT, CBASP focuses on social cognition and emphasizes the role of transference. By leading the patient in understanding and engaging in social behavior that facilitates reciprocal and supportive relationships, CBASP helps the patient heal early traumas. CBASP can be seen as an example of CBT moving beyond its specific components and integrating some ideas shared with the mentalizing approach.

The present study contributes to the existing literature by statistically controlling for other forms of childhood maltreatment in order to disentangle the independent effects of emotional abuse on subsequent mentalizing incapacity and adult depression symptoms. The findings are consistent with prior research suggesting that childhood emotional abuse is a prominent predictor of adult depression symptoms. Considering that a direct path from childhood emotional abuse to adult depression outcomes remains in most mediation studies, not only should future research examine other mechanisms that may contribute to the development of adult depressive symptomatology, but also recollections of childhood emotional abuse ought to become a necessary topic involved in psychological treatments for depression. To the best of our knowledge, this study is the first to directly explore hypermentalizing and hypomentalizing of one's own mental states as mechanisms whereby early emotional abuse can lead to later depression symptoms. As our cross-sectional data in a medium-sized convenience sample might not be adequate to address the question, longitudinal study in a more representative sample is needed to capture relevant context and further examine our findings.

The primary strength of our study is the examination of a modifiable mediator that could potentially inform psychotherapeutic treatment of adult depression. While the results need to be treated with caution due to the various limitations listed above, the findings remain promising. Understanding the pathways through which maltreatment alters a child's developmental trajectory will ultimately help to develop prevention and intervention programmes. A normal to high level of mentalizing capacity could be examined as a general protective factor for cumulative adverse or traumatic experiences on depression, personality disorders, PTSD, and other psychopathology in future studies. A mechanism involving mentalizing might serve to suspend the pathway from childhood maltreatment to subsequent depression and become a promising target in psychological treatments. An enhancement of mentalization in people with depression might ultimately benefit treatment outcomes across various therapeutic approaches where cognitive, schema, behavior, and interpersonal reconstruction may occur as a result of increased mentalizing capacity.

## References

Allen, J., Lemma, A., & Fonagy, P. (2012). Trauma. In A. Bateman & P. Fonagy (Eds.), *Handbook of mentalizing in mental health practice* (pp. 419 - 444). Washington, DC: American Psychiatric Pub.

Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., Dube, S. R., & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience, 256*(3), 174–186.

Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item versions of the depression anxiety stress scales in clinical groups and a community sample. *Psychological Assessment, 10*(2), 176–181.

Asghari, A., Saed, F., Dibajnia, P. (2008). Psychometric properties of the Depression Anxiety Stress Scales-21 (DASS-21) in a non-clinical Iranian sample. *International Journal of Psychology, 2*, 82–102.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51*(6), 1173.

Bateman, A. W., & Fonagy, P. (2012). *Handbook of mentalizing in mental health practice*. Washington, DC: American Psychiatric Pub.

Becker, D. F., & Grilo, C. M. (2011). Childhood maltreatment in women with binge-eating disorder: Associations with psychiatric comorbidity, psychological functioning, and eating pathology. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 16*(2), e113-e120.

Bifulco, A., Bernazzani, O., Moran, P. M., & Jacobs, C. (2005). The childhood experience of care and abuse questionnaire (CECA. Q): Validation in a community series. *British Journal of Clinical Psychology, 44*(4), 563-581.

Bifulco, A., Moran, P. M., Baines, R., Bunn, A., & Stanford, K. (2002). Exploring psychological abuse in childhood: II. Association with other abuse and adult clinical depression. *Bulletin of the Menninger Clinic, 66*(3), 241-258.

Carr, C. P., Martins, C. M. S., Stingel, A. M., Lemgruber, V. B., & Juruena, M. F. (2013). The role of early life stress in adult psychiatric disorders: A systematic review according to childhood trauma subtypes. *The Journal of Nervous and Mental Disease, 201*(12), 1007-1020.

Carvalho Fernando, S., Beblo, T., Schlosser, N., Terfehr, K., Otte, C., Löwe, B., ... & Wingenfeld, K. (2014). The impact of self-reported childhood trauma on emotion regulation in borderline personality disorder and major depression. *Journal of Trauma & Dissociation, 15*(4), 384-401.

Crow, T., Cross, D., Powers, A., & Bradley, B. (2014). Emotion dysregulation as a mediator between childhood emotional abuse and current depression in a low-income African-American sample. *Child Abuse & Neglect, 38*(10), 1590-1598.

Cutajar, M. C., Mullen, P. E., Ogloff, J. R., Thomas, S. D., Wells, D. L., & Spataro, J. (2010). Psychopathology in a large cohort of sexually abused children followed up to 43 years. *Child Abuse & Neglect, 34*(11), 813-822.

Deblinger, E., & Runyon, M. K. (2005). Understanding and treating feelings of shame in children who have experienced maltreatment. *Child Maltreatment, 10*(4), 364-376.

Dimitrijević, A., Hanak, N., Dimitrijević, A. A., & Marjanović, Z. J. (2018). The Mentalization Scale (MentS): A self-report measure for the assessment of mentalizing capacity. *Journal of Personality Assessment, 100*(3), 268-280.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149-1160.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine, 14*(4), 245-258.

Fergusson, D. M., Boden, J. M., & Horwood, L. J. (2008). Exposure to childhood sexual and physical abuse and adjustment in early adulthood. *Child Abuse & Neglect, 32*(6), 607-619.

Fischer-Kern, M., Fonagy, P., Kapusta, N. D., Luyten, P., Boss, S., Naderer, A., Blüml, V., & Leithner, K. (2013). Mentalizing in female inpatients with major depressive disorder. *Journal of Nervous and Mental Disease, 201*(3), 202–207.

Fischer-Kern, M., Tmej, A., Kapusta, N. D., Naderer, A., Leithner-Dziubas, K., Löffler-Stastka, H., & Springer-Kremser, M. (2008). Mentalisierungsfähigkeit bei depressiven patientinnen: Eine pilotstudie. *Zeitschrift Fur Psychosomatische Medizin Und Psychotherapie, 54*(4), 368–380.

Fonagy, P., & Allison, E. (2012). What is mentalization? The concept and its foundations in developmental research. In: N. Midgley & I. Vrouva (Eds.), *Minding the child: Mentalization-based interventions with children, young people and their families* (pp. 11 - 34). Hove, UK: Routledge.

Fonagy, P., & Luyten, P. (2009). A developmental, mentalization-based approach to the understanding and treatment of borderline personality disorder. *Development and Psychopathology, 21*(4), 1355-1381.

Fonagy, P., Bateman, A. W., & Luyten, P. (2012). Introduction and overview. In A. W. Bateman & P. Fonagy (Eds.), *Handbook of mentalizing in mental health practice* (pp. 3-42). Arlington, VA: American Psychiatric Publishing, Inc.

Fonagy, P., Campbell, C., & Bateman, A. (2017). Mentalizing, attachment, and epistemic trust in group therapy. *International Journal of Group Psychotherapy, 67*(2), 176-201.

Fonagy, P., Gergely, G., & Target, M. (2007). The parent–infant dyad and the construction of the subjective self. *Journal of child psychology and psychiatry, 48*(3-4), 288-328.

Fonagy, P., Luyten, P., Moulton-Perkins, A., Lee, Y. W., Warren, F., Howard, S., ... & Lowyck, B. (2016). Development and validation of a self-report measure of mentalizing: The reflective functioning questionnaire. *PLoS One, 11*(7), e0158678.

Fonagy, P., & Target, M. (1997). Attachment and reflective function: Their role in self-organization. *Development and Psychopathology, 9,* 679–700.

Frith, C. D., & Frith, U. (2006). The neural basis of mentalizing. *Neuron, 50*(4), 531–534.

George, C., Kaplan, N., & Main, M. (1996). *The adult attachment interview (3rd ed.).* Unpublished manuscript, Department of Psychology, University of California, Berkeley.

Gibb, B., Alloy, L., Abramson, L., & Marx, B. (2003). Childhood maltreatment and maltreatment-specific inferences: A test of Rose and Abramson's (1992) extension of the hopelessness theory. *Cognition and Emotion*, *17*(6), 917-931.

Gibb, B. E., Chelminski, I., & Zimmerman, M. (2007). Childhood emotional, physical, and sexual abuse, and diagnoses of depressive and anxiety disorders in adult psychiatric outpatients. *Depression and Anxiety, 24*(4), 256-263.

Goldsmith, R. E., Chesney, S. A., Heath, N. M., & Barlow, M. R. (2013). Emotion regulation difficulties mediate associations between betrayal trauma and symptoms of

posttraumatic stress, depression, and anxiety. *Journal of Traumatic Stress, 26*(3), 376–384.

Gotlib, I. H., & Joormann, J. (2010). Cognition and depression: Current status and future directions. *Annual Review of Clinical Psychology, 6*, 285-312.

Hamilton, J. L., Shapero, B. G., Stange, J. P., Hamlat, E. J., Abramson, L. Y., & Alloy, L. B. (2013). Emotional maltreatment, peer victimization, and depressive versus anxiety symptoms during adolescence: Hopelessness as a mediator. *Journal of Clinical Child & Adolescent Psychology, 42*(3), 332-347.

Hankin, B. L. (2005). Childhood maltreatment and psychopathology: Prospective tests of attachment, cognitive vulnerability, and stress as mediating processes. *Cognitive Therapy and Research, 29*(6), 645-671.

Harkness, K. L., Bagby, R. M., & Kennedy, S. H. (2012). Childhood maltreatment and differential treatment response and recurrence in adult major depressive disorder. *Journal of Consulting and Clinical Psychology, 80*(3), 342.

Hart, S. N., & Brassard, M. R. (1987). A major threat to children's mental health: Psychological maltreatment. *American Psychologist, 42*(2), 160-165.

Hart, S. N., & Brassard, M. R. (1991). Psychological maltreatment: Progress achieved. *Development and Psychopathology, 3*(1), 61–70.

Hayes, A. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd ed.).* NY: Guilford Publications.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs, 76*(4), 408-420.

Hovens, J. (2015). *Emotional scars: Impact of childhood trauma on depressive and anxiety disorders*. Department of Psychiatry, Faculty of Medicine, Leiden University Medical Center (LUMC), Leiden University.

Howe, D. (2005). *Child abuse and neglect: Attachment, development, and intervention*. Basingstoke: Palgrave Macmillan.

Infurna, M. R., Reichl, C., Parzer, P., Schimmenti, A., Bifulco, A., & Kaess, M. (2016). Associations between depression and specific childhood experiences of abuse and neglect: A meta-analysis. *Journal of affective disorders, 190,* 47-55.

Johnstone, J. M., Luty, S. E., Carter, J. D., Mulder, R. T., Frampton, C. M., & Joyce, P. R. (2009). Childhood neglect and abuse as predictors of antidepressant response in adult depression. *Depression and Anxiety, 26*(8), 711-717.

Kendler, K. S., Kuhn, J. W., & Prescott, C. A. (2004). Childhood sexual abuse, stressful life events and risk for major depression in women. *Psychological medicine, 34*(8), 1475-1482.

Kent, A., & Waller, G. (1998). The impact of childhood emotional abuse: An extension of the child abuse and trauma scale. *Child Abuse & Neglect, 22*(5), 393-399.

Khan, A., McCormack, H. C., Bolger, E. A., McGreenery, C. E., Vitaliano, G., Polcari, A., & Teicher, M. H. (2015). Childhood maltreatment, depression, and suicidal ideation: Critical importance of parental and peer emotional abuse during developmental sensitive periods in males and females. *Frontiers in Psychiatry, 6*(MAR), 1–30.

Lim, G. Y., Tam, W. W., Lu, Y., Ho, C. S., Zhang, M. W., & Ho, R. C. (2018). Prevalence of Depression in the Community from 30 Countries between 1994 and 2014. *Scientific reports, 8*(1), 2861.

Lovibond, P.F. & Lovibond, S.H. (1995a). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy, 33*, 335-343.

Lovibond, S.H. & Lovibond, P.F. (1995b). *Manual for the Depression Anxiety & Stress Scales. (2nd Ed.).* Sydney: Psychology Foundation.

Luyten, P., & Fonagy, P. (2016). The self in depression. In Beck, A. T. (Eds.), *The self in understanding and treating psychological disorders* (pp. 71-81). Cambridge University Press.

Luyten, P., Fonagy, P., Lemma, A., Target, M. (2012). Depression. In Bateman, A. W., & Fonagy, P. (Eds.), *Handbook of mentalizing in mental health practice* (pp. 385-417). American Psychiatric Pub.

Maciejewski, P. K., & Mazure, C. M. (2006). Fear of criticism and rejection mediates an association between childhood emotional abuse and adult onset of major depression. *Cognitive Therapy and Research, 30*(1), 105-122.

Maguire, S. A., Williams, B., Naughton, A. M., Cowley, L. E., Tempest, V., Mann, M. K., ... & Kemp, A. M. (2015). A systematic review of the emotional, behavioural and cognitive features exhibited by school-aged children experiencing neglect or emotional abuse. *Child: Care, Health and Development, 41*(5), 641-653.

Martins, C. M. S., Baes, C. V. W., de Carvalho Tofoli, S. M., & Juruena, M. F. (2014). Emotional abuse in childhood is a differential factor for the development of depression in adults. *The Journal of Nervous and Mental Disease, 202*(11), 774-782.

May-Chahal, C., & Cawson, P. (2005). Measuring child maltreatment in the United Kingdom: A study of the prevalence of child abuse and neglect. *Child Abuse and Neglect, 29*(9), 969–984.

McCullough, J. (1984). Cognitive-behavioral analysis system of psychotherapy: An interactional treatment approach for dysthymic disorder. *Psychiatry, 47*, 234–250.

McLaughlin, K. A., Fox, N. A., Zeanah, C. H., & Nelson, C. A. (2011). Adverse rearing environments and neural development in children: The development of frontal electroencephalogram asymmetry. *Biological Psychiatry, 70*(11), 1008-1015.

Mersky, J. P., Topitzes, J., & Reynolds, A. J. (2013). Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the U.S. *Child Abuse and Neglect, 37*(11), 917–925.

Musliner, K. L., & Singer, J. B. (2014). Emotional support and adult depression in survivors of childhood sexual abuse. *Child Abuse & Neglect, 38*(8), 1331-1340.

Muthén, L. K. & Muthén, B. O. (2010). *Mplus User's Guide (6th Ed.)*. LA, CA: Muthén & Muthén.

Nanni, V., Uher, R., & Danese, A. (2012). Childhood maltreatment predicts unfavorable course of illness and treatment outcome in depression: A meta-analysis. *American Journal of Psychiatry, 169*(2), 141-151.

Neumann, E. (2017). Recollections of emotional abuse and neglect in childhood as risk factors for depressive disorders and the need for psychotherapy in adult life. *The Journal of Nervous and Mental Disease, 205*(11), 873-878.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891.

Rosenkranz, S. E., Muller, R. T., & Henderson, J. L. (2012). Psychological maltreatment in relation to substance use problem severity among youth. *Child Abuse & Neglect, 36*(5), 438-448.

Sanders, B., & Becker-Lausen, E. (1995). The measurement of psychological maltreatment: Early data on the child abuse and trauma scale. *Child Abuse & Neglect, 19*(3), 315-323.

Schulz, P., Beblo, T., Ribbert, H., Kater, L., Spannhorst, S., Driessen, M., & Hennig-Fast, K. (2017). How is childhood emotional abuse related to major depression in adulthood? The role of personality and emotion acceptance. *Child Abuse & Neglect, 72,* 98-109.

Shapero, B. G., Black, S. K., Liu, R. T., Klugman, J., Bender, R. E., Abramson, L. Y., & Alloy, L. B. (2014). Stressful life events and depression symptoms: The effect of childhood emotional abuse on stress reactivity. *Journal of Clinical Psychology, 70*(3), 209-223.

Sharp, C. (2014). The social–cognitive basis of BPD: A theory of hypermentalizing. In C. Sharp & J. Tackett (Eds.). *Handbook of Borderline Personality Disorder in Children and Adolescents.* New York, NY: Springer.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology, 13,* 290-312.

Spertus, I. L., Yehuda, R., Wong, C. M., Halligan, S., & Seremetis, S. V. (2003). Childhood emotional abuse and neglect as predictors of psychological and physical symptoms in women presenting to a primary care practice. *Child Abuse & Neglect, 27*(11), 1247-1258.

Suchman, N. E., Pajulo, M., & Mayes, L. C. (Eds.). (2013). *Parenting and substance abuse: Developmental approaches to intervention.* Oxford University Press.

Taillieu, T. L., Brownridge, D. A., Sareen, J., & Afifi, T. O. (2016). Childhood emotional maltreatment and mental disorders: Results from a nationally representative adult sample from the United States. *Child Abuse & Neglect, 59*, 1-12.

Taubner, S., Kessler, H., Buchheim, A., Kächele, H., & Staun, L. (2011). The role of mentalization in the psychoanalytic treatment of chronic depression. *Psychiatry: Interpersonal and Biological Processes, 74*(1), 49–57.

Tonmyr, L., Draca, J., Crain, J., & MacMillan, H. L. (2011). Measurement of emotional/psychological child maltreatment: A review. *Child Abuse & Neglect, 35*(10), 767-782.

Tunnard, C., Rane, L. J., Wooderson, S. C., Markopoulou, K., Poon, L., Fekadu, A., ... & Cleare, A. J. (2014). The impact of childhood adversity on suicidality and clinical course in treatment-resistant depression. *Journal of Affective Disorders, 152,* 122-130.

Vachon, D. D., Krueger, R. F., Rogosch, F. A., & Cicchetti, D. (2015). Assessment of the harmful psychiatric and behavioral effects of different forms of child maltreatment. *JAMA Psychiatry, 72*(11), 1135-1142.

van Harmelen, A. L., de Jong, P. J., Glashouwer, K. A., Spinhoven, P., Penninx, B. W. J. H., & Elzinga, B. M. (2010). Child abuse and negative explicit and automatic self-associations: The cognitive scars of emotional maltreatment. *Behaviour Research and Therapy, 48*(6), 486–494.

Van Veen, T., Wardenaar, K. J., Carlier, I. V. E., Spinhoven, P., Penninx, B. W. J. H., & Zitman, F. G. (2013). Are childhood and adult life adversities differentially associated with specific symptom dimensions of depression and anxiety? Testing the tripartite model. *Journal of Affective Disorders, 146*(2), 238-245.

Waxman, R., Fenton, M. C., Skodol, A. E., Grant, B. F., & Hasin, D. (2014). Childhood maltreatment and personality disorders in the USA: Specificity of effects and the impact of gender. *Personality and Mental Health, 8*(1), 30-41.

Widom, C. S., DuMont, K., & Czaja, S. J. (2007). A prospective investigation of major depressive disorder and comorbidity in abused and neglected children grown up. *Archives of General Psychiatry, 64*(1), 49-56.

Wingenfeld, K., Schaffrath, C., Rullkoetter, N., Mensebach, C., Schlosser, N., Beblo, T., ... & Meyer, B. (2011). Associations of childhood trauma, trauma in adulthood and

previous-year stress with psychopathology in patients with major depression and borderline personality disorder. *Child Abuse & Neglect: The International Journal, 35*(8), 647-654.

Wright, M. O. D., Crawford, E., & Del Castillo, D. (2009). Childhood emotional maltreatment and later psychological distress among college students: The mediating role of maladaptive schemas. *Child Abuse & Neglect, 33*(1), 59-68.

**Figure 1** Mediation of relationship between childhood emotional abuse and adult depression symptoms through hypomentalizing, ***$p < .001$.

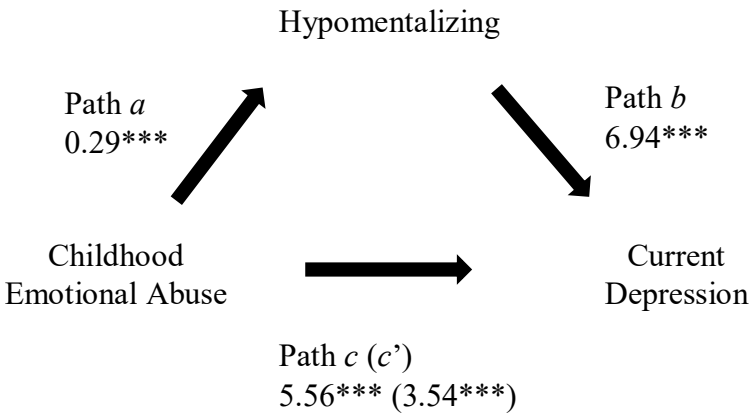


**Figure 2** Mediation of relationship between childhood emotional abuse and adult depression symptoms through hypermentalizing, ***$p < .001$

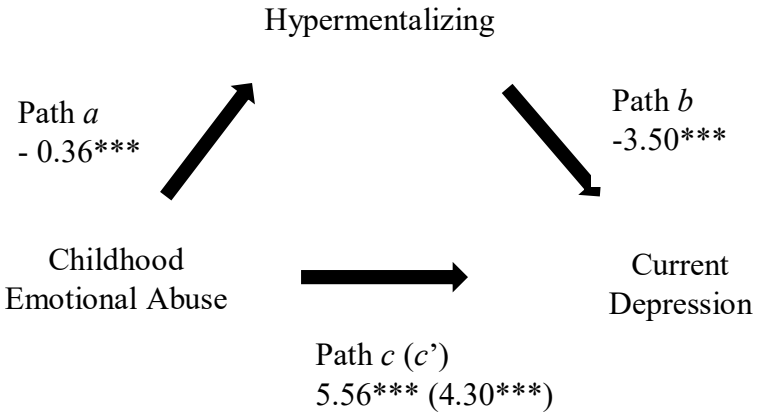

**Table 1** Means, standard deviations and correlations among childhood maltreatment subtypes, mentalizing incapacity and depression symptoms.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | M | SD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Sexual abuse | - | .33** | .26** | .13 | .16* | .02 | .02 | .06 | .10 | .30 |
| 2. Physical abuse | | - | .42** | .43** | .40** | -.18* | .09 | .19* | .17 | .37 |
| 3. Neglect | | | - | .74** | .58** | -.19* | .23** | .28** | 15.78 | 5.81 |
| 4. Antipathy | | | | - | .81** | -.33** | .34** | .37** | 17.39 | 7.26 |
| 5. Emotional abuse | | | | | - | -.36** | .40** | .46** | 1.26 | .88 |
| 6. Hypermentalizing | | | | | | - | -.70** | -.42** | 1.20 | .88 |
| 7. Hypomentalizing | | | | | | | - | .54** | .61 | .64 |
| 8. Depressive symptoms | | | | | | | | - | 11.66 | 10.65 |

* $p < .05$, ** $p < .01$

**Table 2** Hierarchical multiple regression analyses for childhood maltreatment subtypes and mentalizing incapacity predicting adult depression symptoms.

| | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | | Model 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | B (SE B) | *β* | B (SE B) | *β* | B (SE B) | *β* | B (SE B) | *β* | B (SE B) | *β* | B (SE B) | *β* |
| Sexual abuse | .02 (2.70) | .00 | -1.19 (2.66) | -.03 | .13 (2.62) | .00 | -.69 (2.52) | -.02 | .09 (2.41) | .00 | -.29 (2.29) | -.01 |
| Physical abuse | 5.28 (2.19) | .19* | 2.66 (2.30) | .09 | .89 (2.30) | .03 | .19 (2.21) | .01 | -.39 (2.11) | -.01 | 1.13 (2.03) | .04 |
| Neglect | | | .45 (.15) | .25** | .00 (.20) | .00 | .06 (.19) | .03 | .12 (.18) | .06 | .06 (.17) | .03 |
| Antipathy | | | | | .52 (.16) | .35** | -.07 (.21) | -.05 | -.14 (.20) | -.09 | -.11 (.19) | -.07 |
| Emotional abuse | | | | | | | 5.79 (1.38) | .48*** | 4.81 (1.34) | .40*** | 3.77 (1.29) | .31** |
| Hypermentalizing | | | | | | | | | -3.58 (.83) | -.29*** | -.48 (1.05) | -.04 |
| Hypomentalizing | | | | | | | | | | | 6.58 (1.45) | .40*** |
| $R^2$ | | .04 | | .08 | | .14 | | .21 | | .29 | | .36 |
| F model | | 3.26* | | 5.46** | | 7.12*** | | 9.74*** | | 11.96*** | | 14.33*** |

*$p$< .05 **$p$<.01 ***$p$< .001